

Claims:

1. In a chair having a seat, a backrest and support legs, a chair having an automatically adjustable backrest for thereby preventing various backbone-related diseases, comprising:

5 upper, intermediate and lower plates that are installed between the seat and the support legs at a certain interval therebetween in upper and lower directions;

a hydraulic pressure-applying means that is installed between the intermediate plate and the lower plate in such a manner that an elastic
10 operation is achieved in the upper and lower directions, and includes a hydraulic pressure-applying cylinder operating in such a manner that when a user sits on a chair, the intermediate plate is elastically compressed by the weight of the user, and a hydraulic pressure is applied to a reciprocation operation cylinder installed between the upper plate and intermediate plate, and
15 when the user gets up from the seat, the compressed state of the intermediate plate is recovered to its original state, so that the hydraulic pressure supplied to the cylinder is collected;

a guide box that is installed between the upper plate and the intermediate plate and is horizontally installed on an upper surface of the
20 intermediate plate in the forward and backward directions;

a backrest moving means including:

a reciprocation operation cylinder that is horizontally installed in

the interior of the guide box, and the piston rod is appeared as the hydraulic pressure is inputted when the hydraulic pressure is discharged from the hydraulic pressure-applying cylinder of the hydraulic pressure-applying means, and when the hydraulic pressure-applying cylinder collects the hydraulic pressure, the hydraulic pressure is discharged for thereby disappearing the piston rod; and

a main operation member that is horizontally installed and passes through a movement elongated hole formed at both sides of the guide box in a direction perpendicular to the guide box and is connected with a front end of the piston rod of the reciprocation operation cylinder and is forwardly and backwardly moved within a moving range of the movement elongated hole of the guide box based on the forward and backward movements of the piston rod;

a backrest frame that is connected with both ends of the main operation member of the backrest moving means and is forwardly and backwardly moved together with the main operation member; and

an assistant operation member that is movably installed at a rear side between the upper plate and the intermediate plate and is forwardly and backwardly moved together with the backrest frame in a state that both ends of the same are connected with the backrest frame.

2. The chair of claim 1, wherein in said hydraulic pressure-applying means, a certain fluid selected between oil or gas is injected into the hydraulic pressure-

applying cylinder, and the hydraulic pressure-applying cylinder is connected in such a manner that a hydraulic pressure is supplied to the reciprocation operation cylinder of the backrest moving means through the hydraulic pressure line and is collected, and a hydraulic pressure control valve is connected with
5 the hydraulic pressure line for controlling the flow of hydraulic pressure by opening and closing the pressure adjusting valve capable of adjusting the discharge amount of the hydraulic pressure and the hydraulic pressure line.

3. The chair of claim 1, wherein said backrest moving means includes:

10 a shaft support member fixed to both sides near the movement elongated hole of left and right sides with respect to the guide box;

an operation shaft that passes through the movement elongated hole of the guide box, wherein both ends of the same are rotatably installed at the shaft support member through the movement elongated hole of the guide box;

15 a stopper that is installed in the interior of the guide box in a state that it is fixed to the operation shaft;

a pair of roller support members fixed to both sides of the main operation member; and

20 a guide roller that is rotatably installed at the roller support member and supports a protruded guide rail at both lower sides of the upper plate in parallel and rolls along the guide rail as the main operation member is moved.

4. The chair of either claim 1 or claim 3, wherein in said stopper of the backrest moving means, a moving roller is rotatably installed in the operation shaft in a roller installation hole and forwardly and backwardly moves along a moving path formed at a lower center portion of the guide box, and backward
5 and forward movement prevention driving gears are installed at an upper surface of the forward side of the stopper and at a lower surface of the backward side of the same in a slanted state for thereby stopping the stopper.
5. The chair of one selected among claim 1, 3 or 4, wherein backward and
10 forward movement prevention fixing gears engaged with the backward and forward movement prevention driving gears formed in the stopper are formed in the upper and lower surface of the inner side of the guide box for thereby stopping the stopper.
- 15 6. The chair of claim 1, wherein a rotary shaft is installed at a portion higher than the seat as a lower side of the backrest frame wherein both ends of the same are rotatable with respect to the backrest frame; and a detection lower backrest is provided separately from the backrest in the rotary shaft that is rotated in a state that it is protruded in the direction of the seat in the case that
20 the user is not sited on the chair or a certain space is formed between the user's hip portion and the backrest, and when the user sits on the chair, the backrest frame is moved in the forward direction, so that the backrest first

contacts with the user's hip portion before the backrest contacts with the back portion of the user for thereby being rotated as if it is pushed in the backward direction, thus rotating the rotary shaft; and a stopper operation wire connects an end of one side of the rotary shaft and one end of the operation shaft of the main operation member and transfers a rotational force when the rotary shaft is rotated, so that the stopper performs a movement prevention operation and movement release operation.

7. The chair of claim 1, wherein a rotary shaft is installed at a portion higher than the seat as a lower side of the backrest frame wherein both ends of the same are rotatable with respect to the backrest frame; and a detection lower backrest is provided separately from the backrest in the rotary shaft that is rotated in a state that it is protruded in the direction of the seat in the case that the user is not sited on the chair or a certain space is formed between the user's hip portion and the backrest, and when the user sits on the chair, the backrest frame is moved in the forward direction, so that the backrest first contacts with the user's hip portion before the backrest contacts with the back portion of the user for thereby being rotated as if it is pushed in the backward direction, thus rotating the rotary shaft; and a hydraulic pressure control wire connects an end of one side of the rotary shaft and a hydraulic pressure control valve installed in the hydraulic pressure line for thereby opening and closing the hydraulic pressure control valve.

8. The chair of claim 1, further comprising an assistant support shaft vertically fixed to an upper surface of the lower plate, and an assistant hydraulic pressure applying means that is provided between the intermediate plate and the lower plate and includes a seesaw operation member being rotatably
5 attached to an upper end of the assistant support shaft wherein a front end of the same is connected with a lower surface of the front side of the intermediate plate, and the rear end of the same is connected with a piston rod of the hydraulic pressure applying cylinder.

10